

Docket No.: 206576US3

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231



ATTORNEYS AT LAW

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RE: Application Serial No.: 09/847,084

Applicants: Takashi OISHI, et al.

Filing Date: May 3, 2001

For: DOOR FOR REFRIGERATOR AND METHOD OF  
PRODUCING THE DOOR FOR REFRIGERATOR

Group Art Unit: 3635

Examiner: HORTON, YVONNE M.

SIR:

Attached hereto for filing are the following papers:

**RESPONSE TO NOTICE UNDER 37 CFR 1.251 FOR RECONSTRUCTION OF FILE**

**COPY OF NOTICE UNDER 37 CFR 1.251 DATED DECEMBER 6, 2002**

**COPIES OF ALL MATERIAL TO AND FROM THE PATENT AND TRADEMARK OFFICE**

Our check in the amount of \$0.00 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
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DEC 26 2002  
GROUP 3600

206576US3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:

OISHI Takashi, et al.

: EXAMINER: HORTON, YVONNE M.

SERIAL NO: 09/847,084

: GROUP ART UNIT: 3635

FILED: MAY 3, 2001

TITLE: DOOR FOR REFRIGERATOR AND METHOD OF PRODUCING THE DOOR  
FOR REFRIGERATOR

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TECHNOLOGY CENTER 3600  
02 DEC 24 AM 11:31

RESPONSE TO NOTICE UNDER 37 CFR 1.251 FOR RECONSTRUCTION OF FILE

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Responsive to the Notice mailed December 6, 2002, a copy of which is attached,  
Applicants respectfully request the Patent and Trademark Office to accept the attached copies  
of material from our file to reconstruct its file so that the prosecution of the case can be  
resumed.

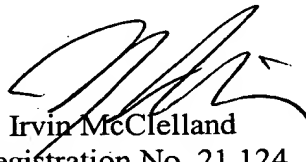
The copies attached hereto are complete and accurate copies of Applicants' record of  
all the correspondence between the Patent Office and Applicants (except for any U.S. patent  
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Applicants that is not among Applicants' records.

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The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



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CIM/dgh

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Gregory J. Maier  
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*PP/JF*

Dept.: PP/JF

OSMM&N File No. 206576US3

By: CIM/bj

Serial No. NEW APPLICATION

In the matter of the Application of: Takashi OISHI, et al.

For: DOOR FOR REFRIGERATOR AND METHOD OF PRODUCING THE DOOR FOR REFRIGERATOR

The following has been received in the U.S. Patent Office on the date stamped hereon:

- ☒ 18 pp. Specification    9 Claims/Drawings    4 Sheets (Formals)  
and    2 pages Application Data Sheet
- ☒ Combined Declaration, Petition & Power of Attorney    3 pages
- ☐ List of Inventor Names and Addresses
- ☒ Utility Patent Application Transmittal
- ☐ Notice of Priority
- ☒ Check for    \$1,060.00
- ☒ Fee Transmittal Form
- ☐ Assignment/PTO 1595 pages:
- ☐ Letter to Official Draftsman
- ☐ Letter Requesting Approval of Drawing Changes
- ☐ Drawings    sheets    ☐ Formal
- ☐ Letter
- ☐ Amendment
- ☒ Information Disclosure Statement
- ☒ Cited References (1)
- ☐ Search Report
- ☐ Statement of Relevancy
- ☐ IDS/Related/List of Related Cases
- ☐ Restriction Response
- ☐ Rule 132 Declaration
- ☐ Petition for Extension of Time
- ☐ Notice of Appeal
- ☐ Brief
- ☐ Issue Fee Transmittal
- ☒ White Advance Serial Number Card
- ☐ Small Entity Status is Claimed
- ☐
- ☐



☒ PTO-1449

☐ Cited Pending Applications

☐ Election Response

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DEC 26 2002

**GROUP 3600**

Due Date: 12/01/01

<b>UTILITY PATENT APPLICATION TRANSMITTAL</b> <small>(Only for new nonprovisional applications under 37 CFR 1.53(b))</small>	Attorney Docket No. <b>208576US3</b>
	First Inventor or Application Identifier <b>TAKASHI, et al.</b>
	Title <b>DOOR FOR REFRIGERATOR AND METHOD OF PRODUCING THE DOOR FOR REFRIGERATOR</b>
Assignee Name: <b>Mitsubishi Denki Kabushiki Kaisha</b>	
Assignee Address: <b>2-3, Marunouchi 2-chome, Chiyoda-ku, Tokyo 100-8310 Japan</b>	

<b>APPLICATION ELEMENTS</b> <i>See MPEP chapter 600 concerning utility patent application contents</i>	<b>ADDRESS TO:</b> Assistant Commissioner for Patents Box Patent Application Washington, DC 20231
1. <input checked="" type="checkbox"/> <b>Fee Transmittal Form (e.g. PTO/SB/17)</b> (Submit an original and a duplicate for fee processing)	<b>ACCOMPANYING APPLICATION PARTS</b>  7. <input type="checkbox"/> Assignment Papers (cover sheet & document(s)) 8. <input checked="" type="checkbox"/> Application Data Sheet. See 37 CFR 1.76 9. <input type="checkbox"/> 37 C.F.R. §3.73(b) Statement <input type="checkbox"/> Power of Attorney (when there is an assignee) 10. <input type="checkbox"/> English Translation Document (if applicable) 11. <input checked="" type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 <input checked="" type="checkbox"/> Copies of IDS Citations (1) 12. <input type="checkbox"/> Preliminary Amendment 13. <input checked="" type="checkbox"/> White Advance Serial No. Postcard 14. <input checked="" type="checkbox"/> Certified Copy of Priority Document(s) (2) (if foreign priority is claimed) 15. <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27 16. <input checked="" type="checkbox"/> Other: Notice of Priority
2. <input checked="" type="checkbox"/> <b>Specification</b> Total Sheets <b>18</b>	
3. <input checked="" type="checkbox"/> <b>Drawing(s) (35 U.S.C. 113)</b> Total Sheets <b>4 (Formals)</b>	
4. <input checked="" type="checkbox"/> <b>Oath or Declaration</b> Total Pages <b>3</b> a. <input checked="" type="checkbox"/> Newly executed (original) b. <input type="checkbox"/> Copy from a prior application (37 C.F.R. §1.63(d)) (for continuation / divisional w/ box 17 completed) i. <input type="checkbox"/> <b>DELETION OF INVENTOR(S)</b> Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §1.63(d)(2) and 1.33(b).	
5. <input type="checkbox"/> CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)	
6. <input type="checkbox"/> Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary) a. <input type="checkbox"/> Computer Readable Form (CRF) b. Specification or Sequence Listing on: i. <input type="checkbox"/> CD-ROM or CD-R (2 copies); or ii. <input type="checkbox"/> Paper c. <input type="checkbox"/> Statements verifying identity of above copies	

17. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below:

☐ Continuation    ☐ Divisional    ☐ Continuation-in-part (CIP)    of prior application no.:  
 Prior application information:    Examiner:    Group Art Unit:

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

18. Amend the specification by inserting before the first line the sentence:

- ☐ This application is a ☐ Continuation ☐ Division ☐ Continuation-in-part (CIP)  
 of application Serial No.    Filed on  
☐ Which was published in English  
☐ Which was not published in English  
☐ This application claims priority of provisional application Serial No.    Filed

#### 19. CORRESPONDENCE ADDRESS



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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S) Takashi OISHI, et al.

SERIAL NO: New Application

FILING DATE: Herewith

FOR: DOOR FOR REFRIGERATOR AND METHOD OF PRODUCING THE DOOR FOR REFRIGERATOR

## FEE TRANSMITTAL

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

FOR	NUMBER FILED	NUMBER EXTRA	RATE	CALCULATIONS
TOTAL CLAIMS	11 - 20 =	0	× \$18 =	\$0.00
INDEPENDENT CLAIMS	4 - 3 =	1	× \$80 =	\$80.00
<input checked="" type="checkbox"/> MULTIPLE DEPENDENT CLAIMS (If applicable)			+ \$270 =	\$270.00
<input type="checkbox"/> LATE FILING OF DECLARATION			+ \$130 =	\$0.00
BASIC FEE				\$710.00
TOTAL OF ABOVE CALCULATIONS				\$1,060.00
<input type="checkbox"/> REDUCTION BY 50% FOR FILING BY SMALL ENTITY				\$0.00
<input type="checkbox"/> FILING IN NON-ENGLISH LANGUAGE			+ \$130 =	\$0.00
<input type="checkbox"/> RECORDATION OF ASSIGNMENT			+ \$40 =	\$0.00
TOTAL				\$1,060.00

- ☐ Please charge Deposit Account No. 15-0030 in the amount of \_\_\_\_\_ A duplicate copy of this sheet is enclosed.
- ☒ A check in the amount of \$1,060.00 to cover the filing fee is enclosed.
- ☒ The Commissioner is hereby authorized to charge any additional fees which may be required for the papers being filed herewith and for which no check is enclosed herewith, or credit any overpayment to Deposit Account No. 15-0030.  
A duplicate copy of this sheet is enclosed.

Respectfully Submitted,

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DOOR FOR REFRIGERATOR AND  
METHOD OF PRODUCING THE DOOR FOR REFRIGERATOR

BACKGROUND OF THE INVENTION

5

1. Field of the Invention

The present invention relates to a door for refrigerator and a method for producing the door for refrigerator.

10 2. Description of the Related Art

Fig. 7 is a perspective view illustrating a conventional door for refrigerator. Referring to the figure, a door 1 is composed of a door panel 3, an inner panel 2, a door cap 4 which is fitting into the upper portions of the door panel 3 and the inner panel 2, and a handle 5 which is fitting into the bottom portions of the door panel 3 and the inner panel 2. Inside the housing of the door 1, a heat insulating foam material is provided.

The door panel 3 is normally painted in a single color. The door 1 is also provided with a sheet metal part which is put between the door panel 3 and the heat insulating foam material. The sheet metal is supposed to keep the door panel 3 from getting uneven on the surface by a thermal shrinkage effect of the heat insulating foam material. The sheet metal part serves both for detaching the door panel 3 from the heat insulating foam material

and for reinforcing the door panel 3.

As the conventional door for refrigerator is thus constructed, the door panel 3 would not look attractive in design if the door panel 3 has an uneven surface caused by the thermal shrinkage effect of the heat insulating foam material. For that reason, the sheet metal part is to be added both for detaching the door panel 3 from the heat insulating foam material and for reinforcing the door panel 3 so that the door panel 3 may not be stretched to cause the uneven surface by the thermal shrinkage of the heat insulating form material. Consequently, this leads to an extra production cost.

There is another problem of the conventional door for refrigerator in respect of the design of the front view of the door 1. The door 1 has such separate parts of injection as the door cap 4 and the handle 5 fitting into the door panel 3 in the upper portion and in the bottom portion, respectively. For that reason, there would be no problem to have some color pattern in the horizontal direction in the front view of the door 1 if the door cap 4 and the handle 5 are painted in a different color from that of the door panel 3. Having such color patterns in the vertical direction in the front view of the door 1, however, requires extra separate parts to be added on both sides of the door panel 3 because the door panel 3 is



painted in a single color. Consequently, this also leads to an extra production cost.

#### SUMMARY OF THE INVENTION

5

One of the objects of the present invention is to provide a door for refrigerator which is sophisticated in design and also cuts production cost and a method of producing the door for refrigerator.

10

This and other objects of the embodiments of the present invention are accomplished by the present invention as hereinafter described in further detail.

15

According to one aspect of the present invention, a door for refrigerator is composed of a door panel made of metal, an inner panel combined with the door panel, a door cap fitting into the door panel and the inner panel in an upper portion, and a handle fitting into the door panel and the inner panel in a bottom portion. Furthermore, the door for refrigerator has a heat insulating foam material injected inside. Then, the door for refrigerator includes draw forming provided at a position near to an edge of at least either side of the door panel.

25

According to another aspect of the present invention,

a door for refrigerator is composed of a door panel made of metal, an inner panel combined with the door panel, a door cap fitting into the door panel and the inner panel in an upper portion, and a handle fitting into the door panel and the inner panel in a bottom portion. Furthermore, the door for refrigerator has a heat insulating foam material injected inside. Then, the door for refrigerator includes draw forming provided a given position of the door panel. The door panel may have a two-tone color, and the draw forming may be provided on a boundary of colors.

According to another aspect of the present invention, a method of producing a door for refrigerator, which is composed of a door panel made of metal, an inner panel combined with the door panel, a door cap fitting into the door panel and the inner panel in an upper portion, and a handle fitting into the door panel and the inner panel in a bottom portion, the door for refrigerator having a heat insulating foam material injected inside, includes the step of providing draw forming at a position near to an edge of at least either side of the door panel.

According to another aspect of the present invention, a method of producing a door for refrigerator, which is composed of a door panel made of metal, an inner panel combined with the door panel, a door cap fitting into the door panel and the inner panel in an upper portion, and a

handle fitting into the door panel and the inner panel in a bottom portion, the door for refrigerator having a heat insulating foam material injected inside, includes the steps of providing draw forming at a given position of the door panel, coloring the door panel in two-tone color, and providing the draw forming on a boundary of colors.

Further scope of applicability of the present invention will become apparent from the detailed description given hereinafter. However, it should be understood that the detailed description and specific examples, while indicating preferred embodiments of the invention, are given by way of illustration only, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from this detailed description.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the detailed description given hereinafter and the accompanying drawings which are given by way of illustration only, and thus are not limitative of the present invention, and wherein:

Fig. 1 shows a front view of a door for refrigerator

according to a first embodiment of the present invention;

Fig. 2 is a Z-Z sectional view of the door for refrigerator of Fig. 1;

Fig. 3 is a graph illustrating a curve based on a draw forming position on each side of the door panel and a maximum amount of displacement corresponding to the draw forming position according to the first embodiment;

Fig. 4 is a graph illustrating a curve based on a draw forming position on each side of the door panel and a maximum amount of displacement corresponding to the draw forming position according to the first embodiment;

Fig. 5 is a sectional view of a door for refrigerator according to a second embodiment;

Fig. 6 is a sectional view of a door for refrigerator according to a third embodiment; and

Fig. 7 is a diagram illustrating a conventional door for refrigerator.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

20

Reference will now be made in detail to the present preferred embodiments of the invention, examples of which are illustrated in the accompanying drawings, wherein like reference numerals indicate like elements through out the several views.

25

Embodiment 1.

Fig. 1 and Fig. 2 are diagrams illustrating a door for refrigerator according to a first embodiment of the present invention. Fig. 1 shows a front view of the door for refrigerator. Fig. 2 shows a Z-Z sectional view of the door for refrigerator of Fig. 1.

Referring to the figures, a door 1 is composed of the combination of a door panel 3, which is one of the components of a front design view of the door 1, and an inner plate 2, which is provided on an inner side of the door panel 3, and a door cap 4 fitting into the combination on an upper portion and a handle 5 fitting into the combination on a bottom portion. The door 1 is provided inside with a heat insulating form material 6.

The door panel 3 is painted in two-tone color. The color of the shaded portions on the door panel 3 of Fig. 1 is different from the color of the other portions. The two-tone color may be of tones of a color with a touch of relaxation such as a combination of deep blue and light blue or of deep gray and white gray, for example. Furthermore, draw forming is provided on the boundaries of the two-tone color on both sides of the door panel 3 by press working in such a manner as to push the center portion of the door panel 3 outwards to form a convexity.

Then, the draw forming is provided at a position of approximately ten percent (10%) of a full width of the door panel 3 away from an edge of the door panel 3 on each side.

5           Fig. 3 is a graph illustrating a relation between a draw forming position B and a maximum amount of displacement of the door panel 3 when the draw forming is provided on both sides of the door panel 3. Fig. 4 is a graph illustrating a relation between a draw forming  
10 position B and a maximum amount of displacement of the door panel 3 when the draw forming is provided on either side of the door panel 3.

As illustrated in the graphs of Fig. 3 and Fig. 4, the door panel 3 gets most reinforced with a least amount  
15 of displacement when the draw forming is provided at a position of approximately ten percent (10%) of the full width of the door panel 3 away from a side edge of the door panel 3. For that reason, the additional sheet metal part needed for the conventional door for refrigerator for  
20 the purpose of keeping the door panel 3 from getting uneven on the surface is allowed to be eliminated.

In addition to that, the draw forming is thus provided in such a manner as to push the center portion of the door panel 3 outwards to form a convexity. For that  
25 reason, it is possible to secure enough thickness for an

efficient heat insulation, thereby achieving less thermal leakage through the door 1.

Furthermore, with a standard module (500-800 in width, 1500-1800 in height) of refrigerator, if the door is designed in such a manner as to give an impression of a frame on the surface of the door on each side, the most effective ratio for the width of the frame (the ratio in which the frame is recognized most effectively) is 10% or less compared to a full width of a door in a front view. For that reason, by placing the draw forming at this most effective position, the design of the door can give the impression that the frame is on the surface of the door on each sided without adding extra separate parts of injection or the like.

Thus, as stated above, according to this embodiment, the door for refrigerator wears an accent in color on both sides of the door panel 3. Alternatively, the accent in color may be provided on either side of the door panel 3. Still alternatively, the draw forming may be provided in any position on the door panel 3 as long as the design of the door is sophisticated enough. For example, the draw forming may be provided at a center portion of the door panel 3 or at any upper and bottom portions of the door panel 3.

It is a positive effect of the door for refrigerator

of this embodiment with the draw forming provided at the position near to the edge of at least either side of the door panel that the door panel is allowed to be reinforced. For that reason, the reinforcing sheet metal needed for  
5 keeping the door panel from getting uneven on the surface is eliminated. This allows the door for refrigerator to be provided at a lower production cost.

It is another positive effect of the door for refrigerator of this embodiment with the draw forming  
10 provided at the position of approximately 10% of the full width of the door panel away from a side edge of the door panel that the door panel is allowed to be most reinforced.

It is still another positive effect of the door for refrigerator of this embodiment with the draw forming  
15 provided in such a manner as to push the center portion of the door panel outwards to form a convexity that the heat insulating wall is allowed to secure enough thickness for producing an energy-saving door for refrigerator.

It is still another positive effect of the door for refrigerator of this embodiment with the draw forming  
20 provided in the two-tone door panel that the door is allowed to wear an accent in color on both sides or either side thereof. In addition to that, the door for refrigerator of this embodiment is allowed to be provided  
25 in the sophisticated design which is associated with a



frame without adding extra separate parts and at a lower production cost.

It is still another positive effect of the door for refrigerator of this embodiment with the draw forming  
5 provided in any given portion of the door panel, with the door panel painted in two-tone color, and with the draw forming provided on the boundary of the two-tone color that the door panel is allowed to be reinforced, thereby eliminating the reinforcing sheet metal for keeping the  
10 door panel from getting uneven on the surface. In addition to that, the door is allowed to wear an accent in color. For that reason, the door for refrigerator of this embodiment is allowed to be sophisticated in design and provided at a lower production cost.

15 According to a method of producing the door for refrigerator of the present invention, the draw forming may be provided at the position near to the edge of at least either side of the door panel. For that reason, the door panel is allowed to be reinforced, thereby  
20 eliminating the reinforcing sheet metal for keeping the door panel from getting uneven on the surface. Consequently, the door for refrigerator is allowed to be provided at a lower production cost.

According to another method of producing the door  
25 for refrigerator of the present invention, the draw

forming may be provided on a given portion of the door panel, the door panel may be painted in two-tone color, and the draw forming may be provided on the boundary of the two-tone color. For that reason, the door panel is  
5 allowed to be reinforced, thereby eliminating the reinforcing sheet metal for keeping the door panel from getting uneven on the surface. In addition to that, the door is allowed to wear an accent in color. This allows the door for refrigerator to be sophisticated in design  
10 and provided at a lower production cost.

#### Embodiment 2.

Fig. 5 is a sectional view of a door for refrigerator according to a second embodiment. Referring  
15 to the figure, a reference numeral 7 denotes a gradation portion having a series of changes of hues. A reference numeral 8 denotes a draw forming portion which is provided on the gradation portion 7. The other portions of the door for refrigerator of Fig. 5 are the same as those discussed  
20 with reference to the door for refrigerator of Fig. 2.

In order to absorb displacement caused by press working, the gradation portion 7 is provided on the boundary of the two-tone color, and the draw forming portion 8 is provided on the gradation portion 7.

25 It is a positive effect of the door for refrigerator

of this embodiment with the gradation portion provided between the colors of the two-tone door panel, and with the draw forming portion provided on the gradation portion that the displacement caused by the draw forming press  
5 working is prevented.

### Embodiment 3.

Fig. 6 is a sectional view of a door for refrigerator according to a third embodiment. Referring to  
10 the figure, a reference numeral 9 denotes a boundary of two-tone color. The other portions of the door for refrigerator of Fig. 6 are the same as those discussed with reference to the door for refrigerator of Fig. 2 or Fig. 5.

15 The boundary of two-tone color 9 is placed in a center portion of the draw forming in consideration of displacement caused by press working, thereby allowing the press working to be done easily.

It is a positive effect of the door for refrigerator  
20 of this embodiment with the boundary of two-tone color placed at the center portion of the draw forming that the press working is allowed to be done easily.

The invention being thus described, it will be  
25 obvious that the same may be varied in many ways. Such

variations are not to be regarded as a departure from the spirit and scope of the invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the

5 following claims.

What is claimed is:

1. A door for refrigerator which is composed of a door panel made of metal, an inner panel combined with the door panel, a door cap fitting into the door panel and the inner panel in an upper portion, and a handle fitting into the door panel and the inner panel in a bottom portion, the door for refrigerator having a heat insulating foam material injected inside, the door for refrigerator comprising:

10 draw forming provided at a position near to an edge of at least either side of the door panel.

2. The door for refrigerator of claim 1, wherein the draw forming is provided at the position of approximately ten percent (10%) of a full width of the door panel away from the edge.

3. The door for refrigerator of claim 1, wherein the draw forming is provided in such a manner as to push the door panel outwards to form a convexity at a center portion of the door panel.

4. The door for refrigerator of claim 1, wherein the door panel has a two-tone color, and  
25 wherein the draw forming is provided on a boundary

of colors.

5. A door for refrigerator which is composed of a door panel made of metal, an inner panel combined with the door panel, a door cap fitting into the door panel and the inner panel in an upper portion, and a handle fitting into the door panel and the inner panel in a bottom portion, the door for refrigerator having a heat insulating foam material injected inside, the door for refrigerator comprising:

draw forming provided at a given position of the door panel;

wherein the door panel has a two-tone color, and

wherein the draw forming is provided on a boundary of colors.

6. The door for refrigerator of claims 4 or 5, further comprising:

a gradation portion provided in the two-tone color;

wherein the draw forming is provided on the gradation portion.

7. The door for refrigerator of claim 4 or 5, wherein the boundary of the colors is provided close to a center portion of the draw forming.

8. A method of producing a door for refrigerator which is composed of a door panel made of metal, an inner panel combined with the door panel, a door cap fitting into the door panel and the inner panel in an upper portion, and a handle fitting into the door panel and the inner panel in a bottom portion, the door for refrigerator having a heat insulating foam material injected inside, the method of producing the door for refrigerator comprising:

10 providing draw forming at a position near to an edge of at least either side of the door panel.

9. A method of producing a door for refrigerator which is composed of a door panel made of metal, an inner panel combined with the door panel, a door cap fitting into the door panel and the inner panel in an upper portion, and a handle fitting into the door panel and the inner panel in a bottom portion, the door for refrigerator having a heat insulating foam material injected inside, the method of producing the door for refrigerator comprising:

20 providing draw forming at a given position of the door panel,

coloring the door panel in two-tone color, and

providing the draw forming on a boundary of colors.

## ABSTRACT

A door for refrigerator which is sophisticated in design and provided at a lower production cost. The door  
5 for refrigerator is composed of a door panel made of metal and an inner plate combined with the door panel in a facing manner, a door cap which fits into the door panel and the inner panel in an upper portion, and a handle which fits into the door panel and the inner panel in a  
10 bottom portion. In addition to that, the door for refrigerator has a heat insulating form material injected inside. Then, the door for refrigerator is provided with draw forming at a position near to the edge of at least either side of the door panel.



Fig. 1

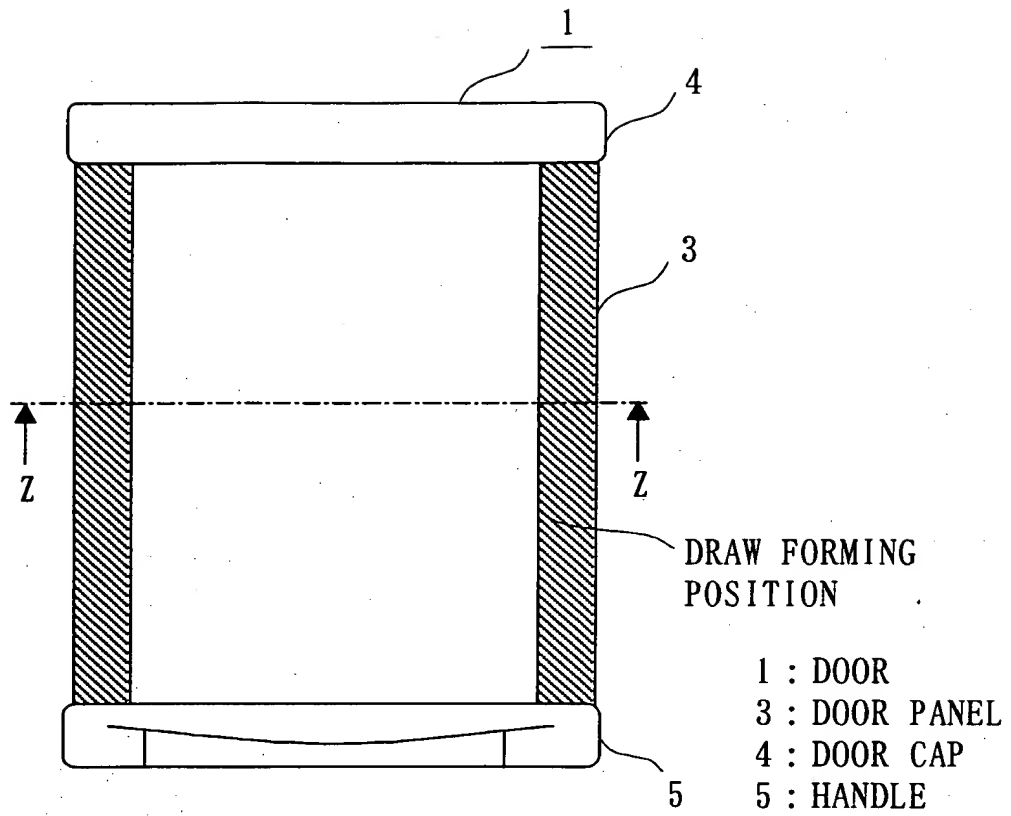


Fig. 2

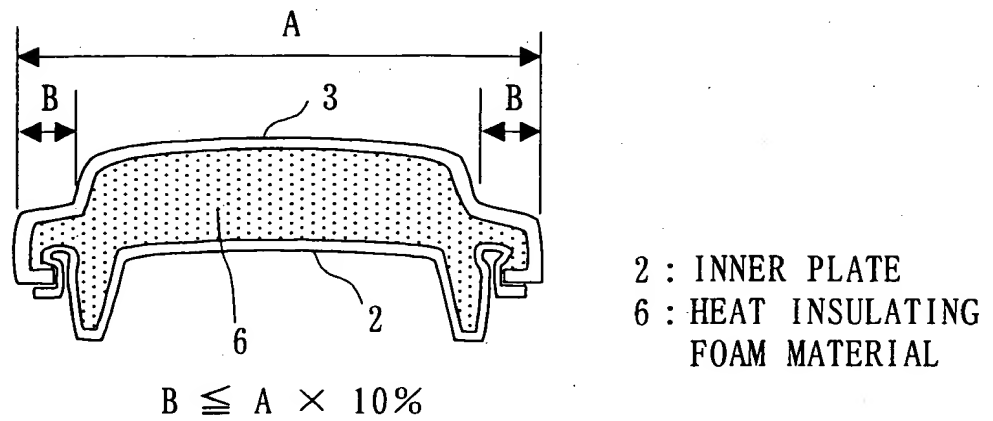


Fig. 3

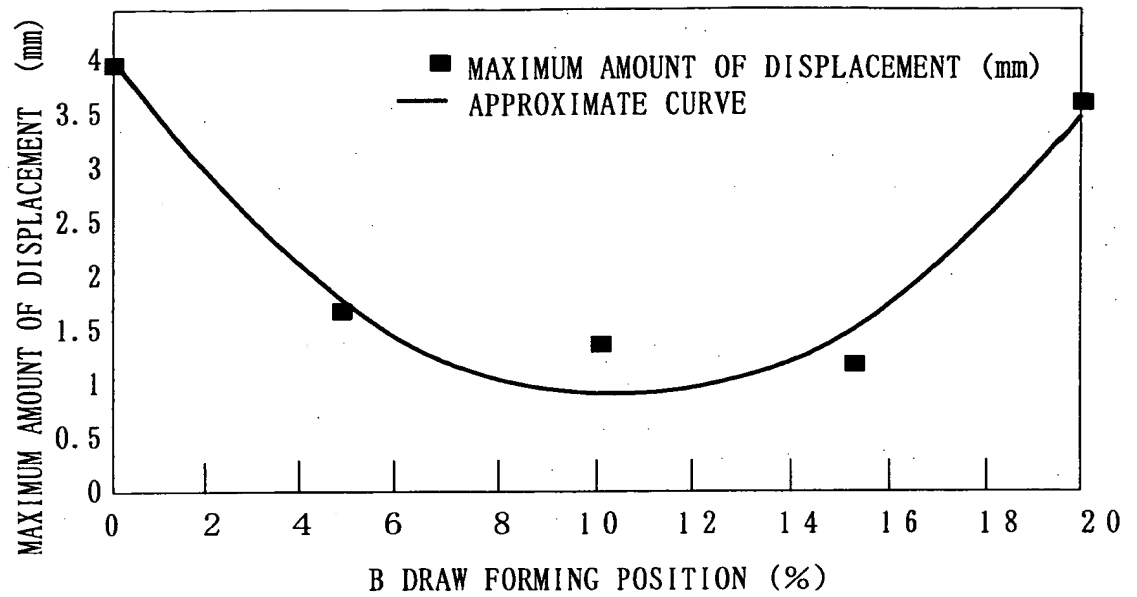


Fig. 4

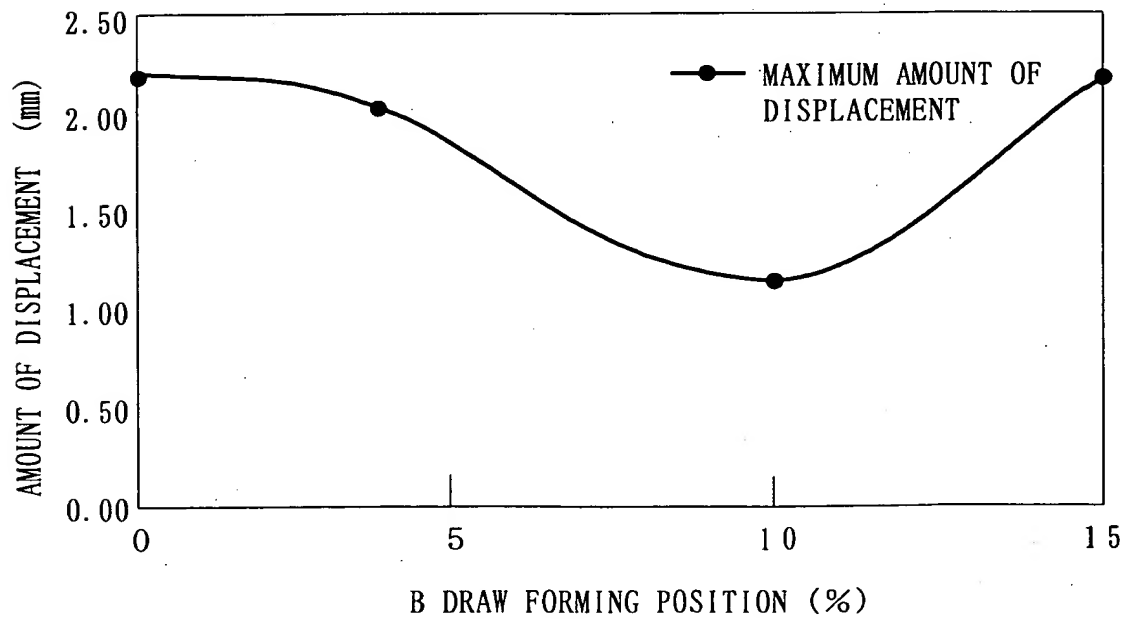


Fig. 5

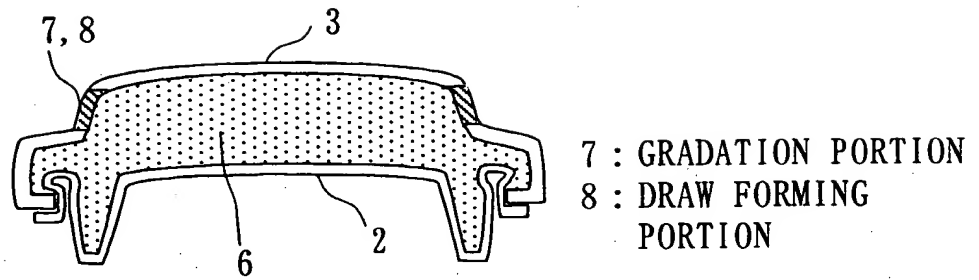


Fig. 6

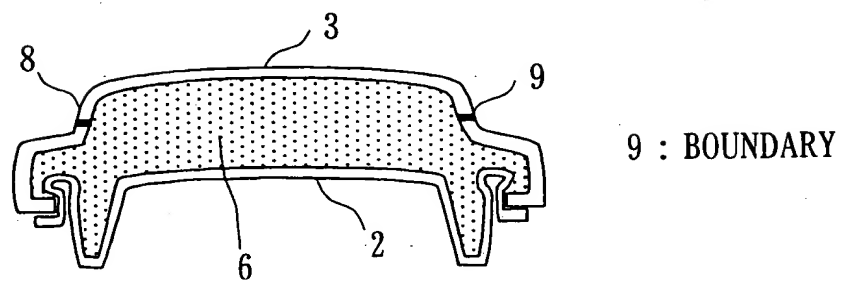
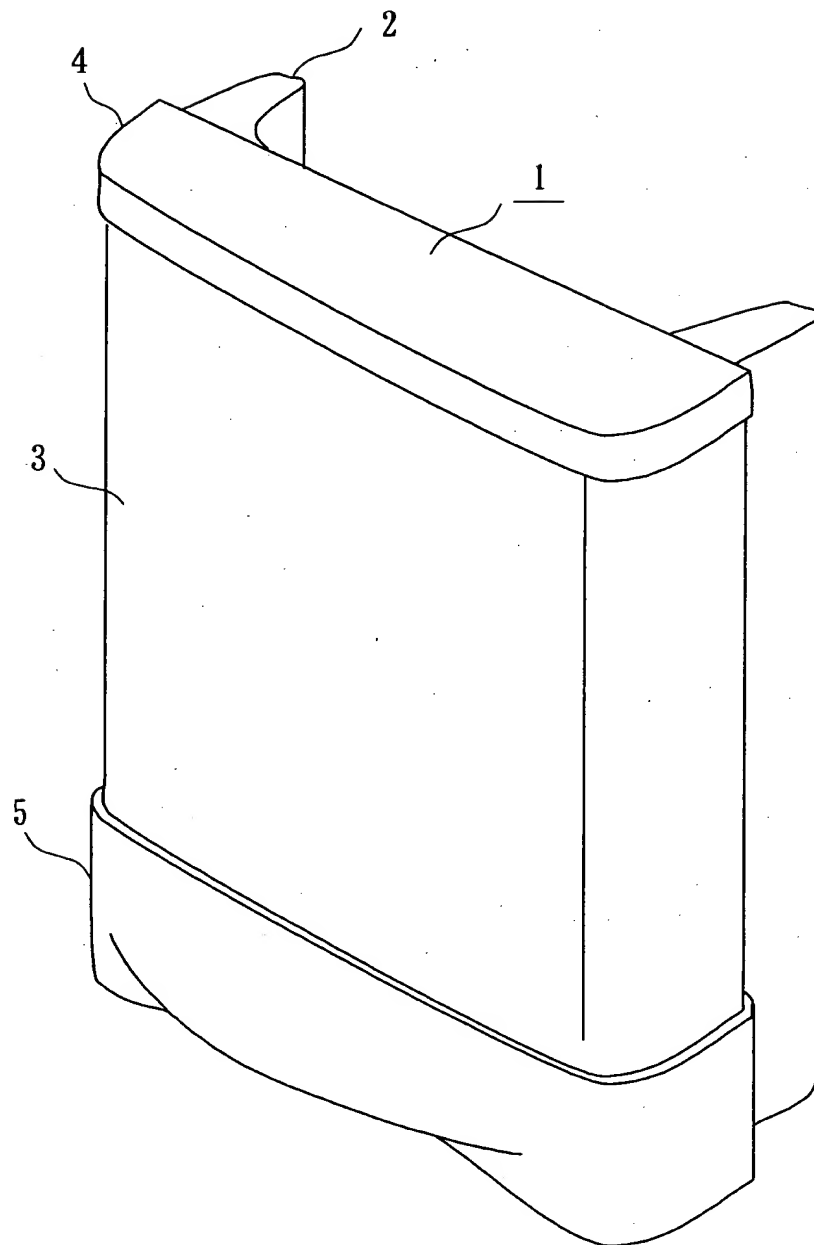


Fig. 7  
CONVENTIONAL ART



# Declaration and Power of Attorney for Patent Application

特許出願宣告書及び委任状

## Japanese Language Declaration

日本語宣告書

下記の氏名の発明者として、私は以下の通り宣言します。

私の住所、私書箱、国籍は下記の私の氏名の後に記載された通りです。

下記の名称の発明に関して請求範囲に記載され、特許出願している発明内容について、私が最初かつ唯一の発明者（下記の氏名が一つの場合）もしくは最初かつ共同発明者であると（下記の名称が複数の場合）信じています。

\_\_\_\_\_  
\_\_\_\_\_

上記発明の明細書（下記の欄で x 印がついていない場合は本書に添付）は、

☐ 月 日に提出され、米国出願番号または特許協定条約国際出願番号を \_\_\_\_\_ とし、（該当する場合） \_\_\_\_\_ に訂正されました。

私は、特許請求範囲を含む上記訂正後の明細書を検討し、内容を理解していることをここに表明します。

私は、連邦規則法典第 37 編第 1 条 56 項に定義されるとおり、特許資格の有無について重要な情報を開示する義務があることを認めます。

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or the subject matter which is claimed and for which a patent is sought on the invention entitled

DOOR FOR REFRIGERATOR AND  
METHOD OF PRODUCING THE  
DOOR FOR REFRIGERATOR

the specification of which is attached hereto unless the following box is checked:

☐ was filed on \_\_\_\_\_  
as United States Application Number or  
PCT International Application Number  
\_\_\_\_\_ and was amended on  
\_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

# Japanese Language Declaration

(日本語宣告書)

私は、米国法典第35編119条(a)-(d)項又は365条(b)項に基づき下記の、米国以外の国の少なくとも一ヶ国を指定している特許協力条約365(a)項に基づく国際出願、又は外国での特許出願もしくは発明者証の出願についての外国優先権をここに主張するとともに、優先権を主張している、本出願の前に出願された特許または発明者証の外国出願を以下に、枠内をマークすることで、示しています。

Prior Foreign Application(s)  
外国での先行出願

<u>2000-367595</u>	<u>JAPAN</u>
Number (番号)	Country (国名)
<u>2001-20192</u>	<u>JAPAN</u>
Number (番号)	Country (国名)

私は、第35編米国法典119条(e)項に基づいて下記の米国特許出願規定に記載された権利をここに主張いたします。

Application No. (番号)      Filing Date (出願日)

私は、下記の米国法典第35編120条に基づいて下記の米国特許出願に記載された権利、又は米国を指定している特許協力条約365条(c)に基づく権利をここに主張します。また、本出願の各請求範囲の内容が米国法典第35編112条第1項又は特許協力条約で規定された方法で先行米国出願書提出日以降で本出願書の日本国内または特許協力条約国際提出日までの期間中に入手された、連邦規則法典第37編1条56項で定義された特許資格の有無に関する重要な情報について開示義務があることを認識しています。

Application No. (出願番号)      Filing Date (出願日)

Application No. (出願番号)      Filing Date (出願日)

私は、私自身の知識に基づいて本宣告書中で私が行う表明が真実であり、かつ私の入手した情報と私の信じることに基づく表明が全て真実であると信じていること、さらに故意になされた虚偽の表明及びそれと同等の行為は米国法典第18編第1001条に基づき、罰金または拘禁、もしくはその両方により処罰されること、そしてそのような故意による虚偽の声明を行えば、出願した、又は既に許可された特許の有効性が失われることを認識し、よってここに上記のごとく宣誓を致します。

I hereby claim foreign priority under Title 35, United States Code, Section 119 (a)-(d) or 365(b) of any foreign application(s) for patent or Inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or Inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Priority Not Claimed  
優先権主張なし

1/12/2000      ☐  
Day/Month/Year Filed (出願の年月日)

29/1/2001      ☐  
Day/Month/Year Filed (出願の年月日)

I hereby claim the benefit under Title 35, United States Code, Section 119 (e) of any United States provisional application(s) listed below

Application No. (番号)      Filing Date (出願日)

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s), or 365 of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.5.6 which became available between the filing date of the prior application and the national or PCT international filing date of application.

Status: Patented, Pending, Abandoned(現況: 特許許可済、係属中、放棄済)

Status: Patented, Pending, Abandoned(現況: 特許許可済、係属中、放棄済)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

# Japanese Language Declaration

(日本語宣告書)

委任状：私は下記の発明者として、本出願に関する一切の手続きを米国特許商標局に対して遂行する弁理士または代理人として、下記の者を指名いたします。(弁理士、または代理人の氏名及び登録番号を明記のこと)

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith (*list name and registration number*)

Norman F. Oblon, Registration Number 24,618; Marvin J. Spivak, Registration Number 24,913; C. Irvin McClelland, Registration Number 21,124; Gregory J. Maier, Registration Number 25,599; Arthur I. Neustadt, Registration Number 24,854; Richard D. Kelly, Registration Number 27,757; James D. Hamilton, Registration Number 28,421; Eckhard H. Kuesters, Registration Number 28,870; Robert T. Pous, Registration Number 29,099; Charles L. Gholz, Registration Number 26,395; Vincent J. Sunderdick, Registration Number 29,004; William E. Beaumont, Registration Number 30,996; Steven B. Kelber, Registration Number 30,073; Robert F. Gnuse, Registration Number 27,295; Jean-Paul Lavalleye, Registration Number 31,451; Timothy R. Schwartz, Registration Number 32,171; Stephen G. Baxter, Registration Number 32,884; Martin M. Zoltick, Registration Number 35,745; Robert W. Hahl, Registration Number 33,893; Richard L. Treanor, Registration Number 36,379; Steven P. Weihrouch, Registration Number 32,829; John T. Goolkasian, Registration Number 26,142; Marc R. Labgold, Registration Number 34,651; William J. Healey, Registration Number 35,160; Richard L. Chinn, Registration Number 34,305; Steven E. Lipman, Registration Number 30,011; Carl E. Schlier, Registration Number 34,426; James J. Kulbaski, Registration Number 34,648; Catherine B. Richardson, Registration Number 39,007; Richard A. Neifeld, Registration Number 35,299; J. Derek Mason, Registration Number 35,270; and Jacques M. Dulin, Registration Number 24,067; with full powers of substitution and revocation.

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国籍	Citizenship <b>Japan</b>
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(第三以降の共同発明者についても同様に記載し、署名をすること)

(Supply similar information and signature for third and subsequent joint inventors.)

APPLICATION DATA SHEET

APPLICATION INFORMATION

Application Type:: REGULAR  
Subject Matter:: UTILITY  
CD-ROM or CD-R?: NONE  
Title:: DOOR FOR REFRIGERATOR AND METHOD OF  
PRODUCING THE DOOR FOR REFRIGERATOR  
Attorney Docket Number:: 206576US3

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CORRESPONDENCE INFORMATION

Correspondence Customer Number:: 22850

REPRESENTATIVE INFORMATION "

Representative Customer Number:: 22850

FOREIGN PRIORITY INFORMATION



Country::  
Application Number::  
Filing Date::

Japan  
2000-367595  
12/01/00

Country::  
Application Number::  
Filing Date::

Japan  
2001-020192  
01/29/01

ASSIGNMENT INFORMATION

Assignee Name::  
Street::  
City::  
State or Province::  
Country::  
Postal or Zip Code::

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Chiyoda-ku  
Tokyo  
Japan  
100-8310

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Takashi OISHI, et al.

GAU:

SERIAL NO: NEW APPLICATION

EXAMINER:

FILED: HEREWITH

FOR: DOOR FOR REFRIGERATOR AND METHOD OF PRODUCING THE DOOR FOR REFRIGERATOR

REQUEST FOR PRIORITY

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

SIR:

- ☐ Full benefit of the filing date of U.S. Application Serial Number, filed, is claimed pursuant to the provisions of 35 U.S.C. §120.
- ☐ Full benefit of the filing date of U.S. Provisional Application Serial Number, filed, is claimed pursuant to the provisions of 35 U.S.C. §119(e).
- ☒ Applicants claim any right to priority from any earlier filed applications to which they may be entitled pursuant to the provisions of 35 U.S.C. §119, as noted below.

In the matter of the above-identified application for patent, notice is hereby given that the applicants claim as priority:

<u>COUNTRY</u>	<u>APPLICATION NUMBER</u>	<u>MONTH/DAY/YEAR</u>
Japan	2000-367595	December 1, 2000
Japan	2001-20192	January 29, 2001

Certified copies of the corresponding Convention Application(s)

- ☒ are submitted herewith
- ☐ will be submitted prior to payment of the Final Fee
- ☐ were filed in prior application Serial No. filed
- ☐ were submitted to the International Bureau in PCT Application Number .  
Receipt of the certified copies by the International Bureau in a timely manner under PCT Rule 17.1(a) has been acknowledged as evidenced by the attached PCT/IB/304.
- ☐ (A) Application Serial No.(s) were filed in prior application Serial No. filed ; and  
(B) Application Serial No.(s)
  - ☐ are submitted herewith
  - ☐ will be submitted prior to payment of the Final Fee

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



22850

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Registration No. 21,124

日本国特許庁

PATENT OFFICE  
JAPANESE GOVERNMENT

別紙添付の書類に記載されている事項は下記の出願書類に記載されている事項と同一であることを証明する。

This is to certify that the annexed is a true copy of the following application as filed with this Office.

出願年月日

Date of Application:

2000年12月 1日

出願番号

Application Number:

特願2000-367595

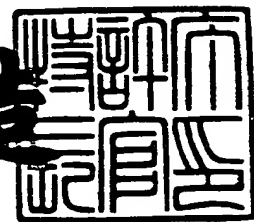
出願人  
Applicant(s):

三菱電機株式会社

2001年 2月 2日

特許庁長官  
Commissioner,  
Patent Office

及川耕造



出証番号 出証特2001-3002694

【書類名】 特許願

【整理番号】 528952JP01

【提出日】 平成12年12月 1日

【あて先】 特許庁長官殿

【国際特許分類】 F25D 23/02

【発明者】

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【選任した代理人】

【識別番号】 100111800

【弁理士】

【氏名又は名称】 竹内 三明

手数料の表示】

【予納台帳番号】 056177

【納付金額】 21,000円

【提出物件の目録】

【物件名】 明細書 1

【物件名】 図面 1

【物件名】 要約書 1

【包括委任状番号】 9903016

【プルーフの要否】 要

書類名】 明細書

発明の名称】 冷蔵庫の扉

【特許請求の範囲】

【請求項 1】 金属製のドアパネルと、このドアパネルに対向して組み合わされる内板と、これらの上端に嵌合するドアキャップと、下端に嵌合するハンドルとで構成され、内部に発泡断熱材を注入発泡してなる冷蔵庫の扉において、

前記ドアパネル左右両端部の少なくとも一方の近傍に絞り加工を施したことを特徴とする冷蔵庫の扉。

【請求項 2】 前記絞り加工を、前記ドアパネルの端部から該ドアパネル全幅の 10% 付近の位置に施したことを特徴とする請求項 1 記載の冷蔵庫の扉。

【請求項 3】 前記絞り加工を、凸方向が前記ドアパネルの中心が外側に出っ張る様に凸としたことを特徴とする請求項 1 記載の冷蔵庫の扉。

【請求項 4】 前記ドアパネルを 2 トーンで構成し、色の境界線上に前記絞り加工による絞り形状を設けたことを特徴とする請求項 1 乃至 3 のいずれかに記載の冷蔵庫の扉。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】

この発明は、冷蔵庫の扉に関するものである。

【0002】

【従来の技術】

図 5 は従来の冷蔵庫の正面図である。図において、扉 1 はドアパネル 3 と内板 2、及びその上端に嵌合するドアキャップ 4、下端に嵌合するハンドル 5 で構成され、内部に発泡断熱材を介在させている。

【0003】

ドアパネル 3 は、通常単色である。また、ドアパネル 3 と発泡断熱材との間には、発泡断熱材の熱収縮によるドアパネルの表面凹凸防止の為、離形と補強を兼ねた板金部品が挟まれている。

【0004】

日本国特許庁  
PATENT OFFICE  
JAPANESE GOVERNMENT

別紙添付の書類に記載されている事項は下記の出願書類に記載されている事項と同一であることを証明する。

This is to certify that the annexed is a true copy of the following application as filed with this Office.

出願年月日  
Date of Application:

2001年 1月29日

出願番号  
Application Number:

特願2001-020192

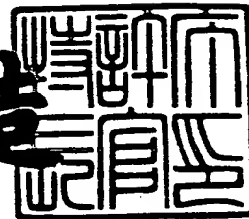
出願人  
Applicant(s):

三菱電機株式会社

2001年 3月 2日

特許庁長官  
Commissioner,  
Patent Office

及川耕造



出証番号 出証特2001-3014716

【書類名】 特許願

【整理番号】 528952JP02

【提出日】 平成13年 1月29日

【あて先】 特許庁長官殿

【国際特許分類】 F25D 23/02

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    【氏名】 大石 隆

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    【弁理士】

    【氏名又は名称】 竹内 三明



【先の出願に基づく優先権主張】

【出願番号】 特願2000-367595

【出願日】 平成12年12月 1日

【手数料の表示】

【予納台帳番号】 056177

【納付金額】 21,000円

【提出物件の目録】

【物件名】 明細書 1

【物件名】 図面 1

【物件名】 要約書 1

【包括委任状番号】 9903016

【ブルーフの要否】 要

【書類名】 明細書

【発明の名称】 冷蔵庫の扉及び冷蔵庫の扉の製造方法

【特許請求の範囲】

【請求項 1】 金属製のドアパネルと、このドアパネルに対向して組み合わされる内板と、これらの上端に嵌合するドアキャップと、下端に嵌合するハンドルとで構成され、内部に発泡断熱材を注入発泡してなる冷蔵庫の扉において、

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【請求項 2】 前記絞り加工を、前記ドアパネルの端部から該ドアパネル全幅の 10% 付近の位置に施したことを特徴とする請求項 1 記載の冷蔵庫の扉。

【請求項 3】 前記絞り加工を、凸方向が前記ドアパネルの中心が外側に出っ張る様に凸としたことを特徴とする請求項 1 記載の冷蔵庫の扉。

【請求項 4】 前記ドアパネルを 2 トーンで構成し、色の境界線上に前記絞り加工による絞り形状を設けたことを特徴とする請求項 1 乃至 3 のいずれかに記載の冷蔵庫の扉。

【請求項 5】 金属製のドアパネルと、このドアパネルに対向して組み合わされる内板と、これらの上端に嵌合するドアキャップと、下端に嵌合するハンドルとで構成され、内部に発泡断熱材を注入発泡してなる冷蔵庫の扉において、

前記ドアパネルの所定箇所に絞り加工を施し、該ドアパネルを 2 トーンで構成し、色の境界線上に前記絞り加工による絞り形状を設けたことを特徴とする冷蔵庫の扉。

【請求項 6】 前記 2 トーン間にグラデーション部を設け、このグラデーション部に絞り形状を設けたことを特徴とする請求項 4 または 5 記載の冷蔵庫の扉。

【請求項 7】 前記色の境界線を前記絞り加工の中心付近に配置したことを特徴とする請求項 4 または 5 または 6 記載の冷蔵庫の扉。

【請求項 8】 金属製のドアパネルと、このドアパネルに対向して組み合わされる内板と、これらの上端に嵌合するドアキャップと、下端に嵌合するハンドルとで構成され、内部に発泡断熱材を注入発泡してなる冷蔵庫の扉の製造方法に

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Takashi OISHI, et al.

SERIAL NO: NEW APPLICATION

GAU:

FILED: HEREWITH

EXAMINER:

FOR: DOOR FOR REFRIGERATOR AND METHOD OF PRODUCING THE DOOR FOR REFRIGERATOR

INFORMATION DISCLOSURE/RELATED CASE STATEMENT UNDER 37 CFR 1.97

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

SIR:

Applicant(s) wish to disclose the following information.

REFERENCES

- ☒ The applicant(s) wish to make of record the references listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- ☐ A check is attached in the amount required under 37 CFR §1.17(p).

RELATED CASES

- ☐ Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the patent(s), together with a copy of the claims and drawings of the pending application(s) is attached along with PTO 1449.
- ☐ A check is attached in the amount required under 37 CFR §1.17(p).

CERTIFICATION

- ☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

DEPOSIT ACCOUNT

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

---

C. Irvin McClelland  
Registration No. 21,124



22850

Tel. (703) 413-3000  
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(OSMMN 10/98)

## Door Equipment

A reference numeral (1) denotes the body of a door which is composed of an outer panel (2), an inner panel (3), a heat insulating foam material (4) being sandwiched between the outer panel (2) and the inner panel (3), and so on. The outer panel (2) is made of a steel sheet and so on. The outer panel (2) bends itself upwards in a rising manner on the both sides and then bends itself again at the rising portions in such a manner as the both ends oppose to each other. Then, the front portion (2A) of the outer panel and the rising portions (2B) on the both ends form a shield like shape. In addition to that, avoiding the right angle at a point where the front portion (2A) and each of the rising portions (2B) meet, an inclined or bowed surface is formed at each corner edge (2C) (2C) of the front surface.

Ornamental frames (5)(6) are formed at approximately the right angle to the front surface or the like at the extending portions of the front surface on the both sides, thereby forming concave portions (7)(8) with the ornamental frames each thrusting outwards between the corner edge (2C)(2C) of the outer panel (2) and an opposing marginal side edge (5A)(6A). (The concave portion (7) is omitted to be illustrated because it is formed approximately in a symmetrical manner to the concave portion (8).) A reference numeral (9) denotes a decorative band which is made of synthetic resin or the like and formed in a pole-like shape. The decorative band (9) is attached in a sticking manner to the corner edge (2C) of the outer panel (2) by means of an adhesive tape (10) or the like in a peel-able manner so that the decorative band (9) covers the corner edge (2C). In addition to that, the decorative bands (9) engage, respectively, with the both ends within the concave portions (7)(8). The decorative band (9) is covered by the ornamental frame (5)(6) in such a manner as the ornamental frame (5)(6) supports the decorative band (9). In this case, it is desirable that the both ends of the decorative band (9) are formed almost in the same shapes as those of the openings of the opposing concave portions (7)(8), respectively, and that the both ends of the decorative band (9) are press fitted in such a manner as the both ends are engaged within the concave portions (7)(8), respectively. It is additionally desirable that the decorative band (9) is flexible at a center portion, thereby allowing the center portion to have a little deflection at least, so that the both ends are allowed to be engaged, respectively, within the concave portions (7)(8) after covering the ornamental frames (5)(6) over the outer panel (2). A reference numeral (11) denotes a decorative piece attached to the decorative band (9) as required.



特許庁長官殿  
新案登録願 (7) 昭和53年10月5日

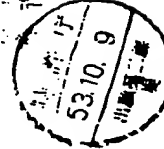
- 特許庁長官殿
1. 考案の名称 扉装置
2. 考案者 群馬県邑楽郡大泉町大字坂田180番地  
東京三洋電機株式会社内  
氏名 藤原 貞 雄 (外1名)

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名称 (188) 三洋電機株式会社  
代表者 井 植 茂  
住所 群馬県邑楽郡大泉町大字坂田180番地  
名称 (378) 東京三洋電機株式会社  
代表者 井 植 茂

連絡先：電話 (東京) 835-1111 特許センター駐在 藤田

添付書類の目録

- (1) 明 書 1 通  
(2) 図 面 1 通  
(3) 願 書 前 本



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55-54885

明 細 書

1. 考案の名称 扉装置  
2. 実用新案登録請求の範囲

1. 一方の対向二辺を相対向方向に立上り折曲して、外板を前辺と立上辺等とにて略矩形状となすと共に、前記前辺と立上辺との交叉角部に、面状の隅角辺を形成し、且つ、前記外板の前記立上辺を設けない他方の対向辺に端面を設けて略長尺容器状の装飾枠を嵌着し、更に、該装飾枠の隅角縁と前記隅角辺との間に外側方へ突出した凹所を形成し、且つ前記隅角辺には、両端を前記凹所内に嵌入した化粧帯を添着せしめたる事を特徴とする扉装置。

3. 考案の詳細な説明

本家は扉装置の改良構成に關し、特に全周に装飾枠を設けることなく簡略化し且つ全周に設けたのと同等の意匠的効果を奏したものである。

従来冷蔵庫等に設けられた此種扉体は、外面に露出する扉外板を鋼板等にて形成する場合、扉本体をプレス加工にて四隅面を立上つた容縁状にするか、

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成いは平板の全面に合成樹脂製の化粧伸を固着して形成していた。そのため前者では成形成に精度を要し、且つ同形状で寸法の異なる機種には転用出来ず、各機種毎に成形成を要し設備が高価であり、部品点数也多かつた。又、後者では成形成は容易であるが、前面壁となる外板と化粧伸との係合箇所が多く断熱材の免洩漏防止のシール作業が煩雑であると共に、周囲方向よりの衝撃荷重に対して弱く輸送時の落下や積重ね等によつて躯体が変形破損しやすいし、損傷した場合の交換は、全周連続した化粧伸であれば面倒であり且つ高価となり、各辺別個のものであれば各辺の接合部の断熱材漏洩防止シールが一層複雑となり、総合的にはやはり前者同様欠点が多かつた。

本案に係る点に鑑みて成されたものであり、以下図について説明する。

(1)は外板(2)、内板(3)及び該両板(2)(3)間に装填した発泡性の断熱材(4)等より構成する扉本体で、側板等よりなる前配外板(2)は、一方の対向二辺を相対向方向に立上り折曲して、前面辺(2A)と立上

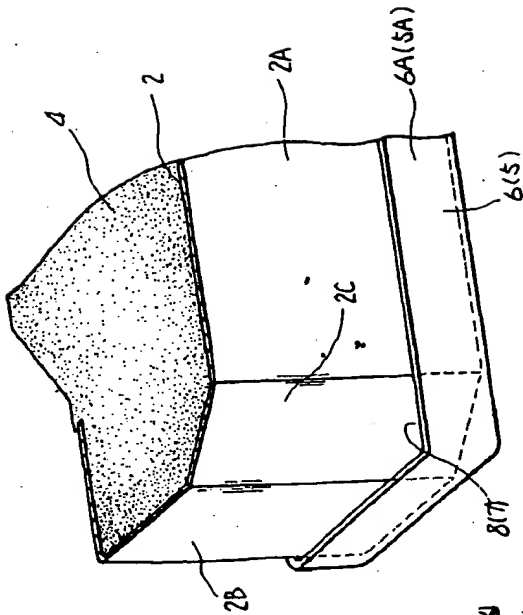
り二辺(2B)(2C)にて略箱状に形成すると共に、前面辺(2A)と各立上辺(2B)(2C)との交叉角部を直角にすることなく、傾斜或いは彎曲せる面状の隅角辺(2C)(2C')を夫々形成している。(5)(5)は

前配外板(2)の立上辺(2B)(2C)を設けない他方の対向二辺の端縁を覆つて、該外板(2)に装着した裝飾枠で、合成樹脂等にて周縁を一方は垂下し、他方は立上つて周側縁(5A)(6A)を形成して略長尺容器状となし、且つ周側縁(5A)(6A)の前辺及び両側辺後方には少許間隔を存して突出辺(5B)(6B)を対向形成し、前配外板(2)の前辺(2A)及び立上辺(2B)(2C)の端縁を周側縁(5B)(6B)とにて嵌合接合している。更に前配裝飾枠(5)(5)は、前部両側伸部を略直角等に形成して、前配外板(2)の隅角辺(2C)(2C)と対向せる周側縁(5A)(6A)との間に外側方へ突出した凹所(7)(8)を形成している。(凹所(7)(8)は略対称形状であり図示は省略する、)(9)は合成樹脂等にて略棒状に形成された化粧帯で、前配外板(2)の隅角辺(2C)に接合テープ(10)等にて制離可能に密着して貼着せしめて、該隅角辺(2C)

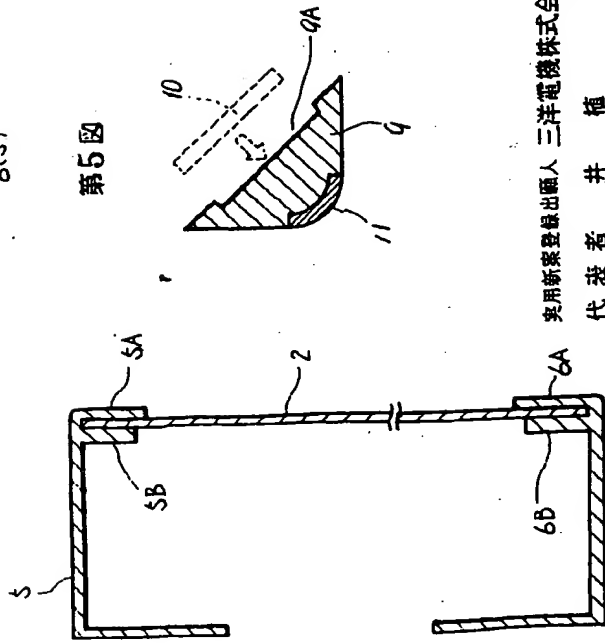
六字挿入一字抹消

い下欄へ

第3図



第4図



第5図

実用新案登録出願人 三洋電機株式会社

代表者 井植 繁

第1表

5,4885/2 6

5. 前記以外の考案者

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東京三洋電機株式会社内

氏名 尾 島 洋 一

55-54885-

を覆うと共に、両端を前記凹所(7)(8)内に夫々嵌合し、前記両裝飾棒(5)(6)にて覆着支持している。この場合、化粧棒(8)の両端は対向する前記凹所(7)(8)の開口形状と略同形となし、該凹所(7)(8)内に夫々圧入嵌合されるのが望ましく、且つ中央部は少くとも少許撓む可塑性となして、前記裝飾棒(5)(6)を外板(2)に覆着後、前記凹所(7)(8)に両端を嵌合可能とするのが望ましい。(11)は必要に応じて前記化粧棒(8)に添着した飾り片である。前記接着テープ

(4)の厚さが大なる場合には外方に露出するのを避けるため、前記化粧棒(8)に挿入用凹部(9A)を形成すれば効果的である。(14)は前記本体(11)内周縁に装着したガスケットで、取付基部(12A)と覆板の相互に区画された空室(12B)(12C)(12D)等とより形成し、内方に位置した空室(12C)にモルトブレン等の弾性体(13)を挿入し、被当接面に当接する空室(12D)には磁石体(14)を挿入配設している。

本発明は以上の如く構成しているため、外板は一方の対向二辺が折曲されており、断熱材のシール作業は、他方の対向二辺に装着した裝飾棒との間

にて行えば良く、全周化粧棒の従来に比しシール作業は半減以上に向上する。又、立上辺を形成しない他方の対向二辺の寸法を変更することによつて、容易に大ききさの異なる種類に対応出来、立上辺折曲形成用の装置は共用出来るので設備の有効利用が計れる。

更に外板の前辺と立上辺との交叉角部に面状の隅角辺を形成し、この隅角辺を化粧棒にて覆つてゐるため、正面意匠的には外板全周を化粧棒にて囲繞したと略同等の効果を奏すると共に、前記裝飾棒と相俟つて本体全周角部の保護となり、輸送時や設置時の打痕等を外板に及ぼすことから防止し、外板の塗装を剝離して錆びることがなくなる。又、前記化粧棒は両端を裝飾棒にて支持され、且つ打り脱落することがなく、確実に支持され、且つ打り、隅角辺への密着状態が十分でなくとも外板より剝離により損傷した場合の交換は、断熱材に關係なく隅角辺との密着を剝離し、裝飾棒との嵌合を凹所より抜き出すことにより外せば容易に行え交換作業も簡略化出来る。



4. 図面の簡単な説明

第1図は本装置の斜視図、第2図は一部切欠せる同視断面図、第3図は完成前の同要部断面斜視図、第4図は同じく一部切欠せる完成前の要部断面図、第5図は同化粧帯の断面図である。

(5)(6)…装飾部、(7)(8)…凹所、(9)…化粧帯。

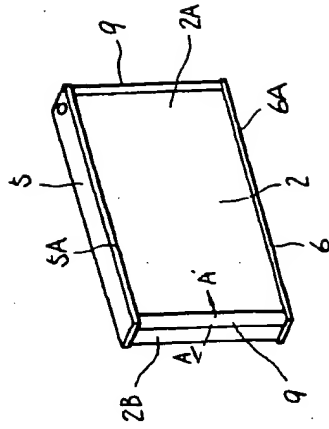
実用新案登録出願人

三洋電機株式会社

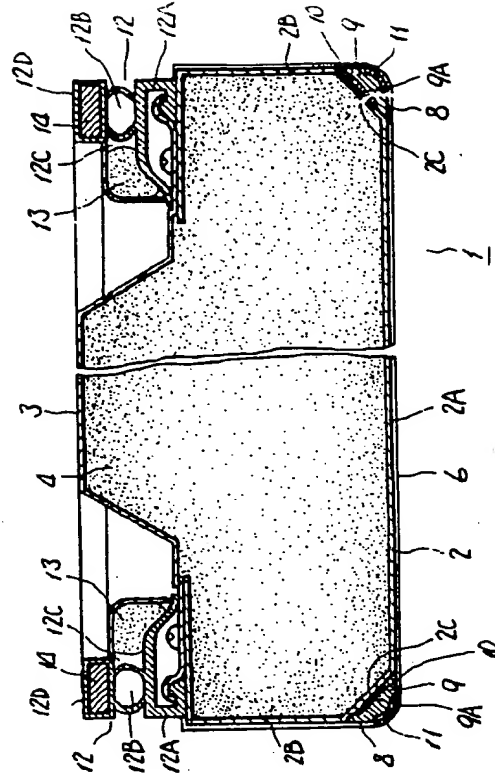
代表者 井 植

外1名

第1図



第2図



実用新案登録出願人 三洋電機株式会社

代表者 井 植

外1名

54885 1/2

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
09/847,084	05/03/2001	Takashi Oishi	206576US3

**CONFIRMATION NO. 6987**

22850  
OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC  
FOURTH FLOOR  
1755 JEFFERSON DAVIS HIGHWAY  
ARLINGTON, VA 22202



**Title:** Door for refrigerator and method of producing the door for refrigerator

**Publication No.** US-2002-0066258-A1  
**Publication Date:** 06/06/2002

Date Mailed: 06/06/2002

## NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at [www.uspto.gov](http://www.uspto.gov). The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Crystal Gateway 4, Room 335, Washington, D.C. 20231, or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at [www.uspto.gov](http://www.uspto.gov) using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

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OBLON, SPIVAK, MCCLELLAND  
MAIER & NEUSTADT, P.C.

**DOCKETING DEPT.**

Initials/Date Docketed: *[Signature]*  
Type of Resp(s): \_\_\_\_\_  
Due Date(s): \_\_\_\_\_



## UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/847,084	05/03/2001	3634	1060	206576US3	4	9	4

CONFIRMATION NO. 6987

22850  
OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC  
FOURTH FLOOR  
1755 JEFFERSON DAVIS HIGHWAY  
ARLINGTON, VA 22202

## FILING RECEIPT



\*OC000000006225345\*

Date Mailed: 06/26/2001

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

## Applicant(s)

Takashi Oishi, Tokyo, JAPAN;  
Shou Hanaoka, Tokyo, JAPAN;

## Assignment For Published Patent Application

Mitsubishi Denki Kabushiki Kaisha, Tokyo, JAPAN;

## Domestic Priority data as claimed by applicant

## Foreign Applications

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JAPAN 2001-020192 01/29/2001

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Projected Publication Date: 06/06/2002

Non-Publication Request: No

Early Publication Request: No

Title

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JUN 27 2001

OBLON, SPIVAK, MCCLELLAND,  
MAIER & NEUSTADT, P.C.

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**Date:** 06/26/2001

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**Title 37, Code of Federal Regulations, 5.11 & 5.15**

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- The title may be truncated if it consists of more than 500 characters (letters and spaces combined).
- The docket number allows a maximum of 25 characters.
- If your application was submitted under 37 CFR 1.10, your filing date should be the "date in" found on the Express Mail label. If there is a discrepancy, you should submit a request for a corrected Filing Receipt along with a copy of the Express Mail label showing the "date in."
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 Office of Initial Patent Examination  
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# UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,084	05/03/2001	Takashi Oishi	206576US3	6987

22850 7590 03/28/2002

OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC  
FOURTH FLOOR  
1755 JEFFERSON DAVIS HIGHWAY  
ARLINGTON, VA 22202

EXAMINER

HORTON, YVONNE MICHELE

ART UNIT PAPER NUMBER

3635

DATE MAILED: 03/28/2002

RD 6-28-02

Please find below and/or attached an Office communication concerning this application or proceeding.

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OBLON, SPIVAK, McCLELLAND  
MAIER & NEUSTADT PC.

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DEC 26 2002  
GROUP 2600

# Office Action Summary

Application No.  
09/847,084

Applicant(s)  
TAKASHI OISHI

Examiner  
YVONNE M. HORTON

Art Unit  
3635



- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on May 3, 2001
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some\* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 20) ☐ Other: \_\_\_\_\_



Art Unit: 3635

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

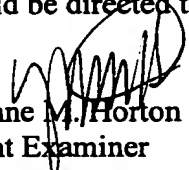
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not clearly define what is and/or what is meant by "draw forming".

Although "draw forming" is mentioned throughout the specifications several times, there is not clear definition as to what is intended by "draw forming". In this, the claims are incomprehensible. Clarification is required.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvonne M. Horton whose telephone number is (703) 308-1909.

  
Yvonne M. Horton  
Patent Examiner  
Art Unit 3635  
March 18, 2002

Carl Friedman  
(703) 308-0839

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 206576US3		SERIAL NO. New Application	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT Takashi OISHI, et al.			
				FILING DATE HEREWITH		GROUP	

1017 U.S. P.  
 09/847084  
 05/03/01

U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						
	AL						
	AM						
	AN						

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FOREIGN PATENT DOCUMENTS						
		DOCUMENT NUMBER	DATE 1900's	COUNTRY	TRANSLATION YES NO	
<i>gm</i>	AO	55-54885	10/5/53	Japan (with partial English Translation))		X
	AP					
	AQ					
	AR					
	AS					
	AT					
	AU					
	AV					

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)	
	AW
	AX
	AY
	AZ

Examiner <i>gm</i>	Date Considered 3/15/02
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\*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.